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U.S. PATENT & TRADEMARK OFFICE

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

Patrick BRIOT et al.

Examiner: N.G. Norton

Serial No.: 09/644,605

Group Art Unit: 1764

Filed: August 24, 2000

Title: PROCESS FOR PRODUCING OILS WITH A HIGH VISCOSITY INDEX

**SUPPLEMENTAL REMARKS**

Mail Stop  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Further to Applicants' Amendment filed September 4, 2003, the following remarks are presented for additional clarification.

At page 9 of Applicants' prior remarks, the secondary reference of Kydd is discussed, and it is explained that the process of Kydd is non-analogous to that presently claimed and, even if combined with the other references, would not result in the presently claimed process. It is additionally noted, in this regard, that Kydd does not disclose thermal diffusion. Note that the "fractionation" step 36, discussed at col. 3 of the patent, is nowhere disclosed as a thermal diffusion process. It is well known that thermal diffusion is distinct from other types of fractionation, since thermal diffusion separates a product according to viscosity (analogous to product quality) while distillation separates solely by boiling point. Thus, the present claims, which recite separation based on viscosity indices, and claim 13, reciting step (c) being carried out in a thermal diffusion column, are not suggested by Kydd. Moreover, while it is recognized that Walker was cited to disclose thermal diffusion, it is respectfully submitted that it is not



permissible to pick and choose portions of these references for combination, in the complete absence of motivation to make such a melding of teachings. As noted, thermal diffusion separates materials based on viscosity, which is clearly not taught in Kydd, or in Billion. Thus, one of ordinary skill in the art would not modify either of these references by replacing any of the fractionations therein with thermal diffusion and thus, separation based on viscosity, where there is no suggestion that such a non-analogous technique - one which produces different products - should be used.

Moreover, even if one of ordinary skill in the art were to substitute thermal diffusion into Kydd (and then combine with Billion), Kydd teaches fractionation (in vessel 36) *followed by* distillation (in vessel 42). Thus, this reference does not teach a *second* step of thermal diffusion, for example, *preceded by* a fractionation step such as distillation. Such modification essentially reversing the steps in Kydd and converting the fractionation therein to a thermal diffusion step, is needed to result in the present claims - yet not taught. If one of ordinary skill in the art were to perform thermal diffusion followed by distillation, the entire effluent would be separated according to viscosity index, with top paraffinic fractions and bottom aromatic fractions, and any intermediate portion mixtures thereof. In order to recover a fraction with low viscosity index, for example, kerosene or gas oil, *each* of the fractions obtained from thermal diffusion would have to be distilled to extract, for example, kerosene and gas oil. This is not the process which is presently claimed, in which the residue of fractionation is treated by thermal diffusion in (c), enabling the treatment of less volume.

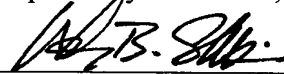
Moreover, as noted in Applicants' prior remarks, even if Kydd were combined with the other references, it does not teach a recycle as presently claimed. Kydd recycles overhead supernatant from acid precipitation of preasphaltenes in the resid. See col. 1, lines 66 to col. 2, line 2, and line 48 in the figure. Asphaltenes are sent through line 49 to a coker, like waste. The overhead supernatant fraction in line 46 is a heavy fraction, having a high viscosity index and, thus, arguably, roughly analogous to "oils with a high viscosity index" which are the object of the process in the present claims. Thus, Kydd teaches a recycle of what would be a desired product in the point of view of the present process, and thus Kydd teaches a process which is totally non-analogous to the present claims.



Accordingly, it is again respectfully maintained that the references, whether singly or in combination, fail to teach the presently claimed process. Withdrawal of the rejections and passage to issue is therefore respectfully requested.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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